2. The time required for the development of silicosis varies from a few years to twenty or more, depending on the concentration of silica particles in the air and the constancy of exposure.

3. Beginning silicosis is recognizable only by properly taken roentgen films of the chest; small nodular shadows distributed throughout both lungs are the characteristic appearance. There are no symptoms or physical signs associated with early simple silicosis which can be depended upon for making diagnosis.

4. Associated with silicosis is a marked predisposition to tuberculosis.

5. Silicosis can be prevented by protecting the industrial worker from inhaling silica dust. This may be accomplished by engineering measures.

6. Concentrations to which the dust must be reduced in order to be safe have not been absolutely determined.

7. Industrial dusts, containing silica, are frequently not all silica, being mixed with other materials. It is possible that some of these nonsilica components may prevent or modify the action of silica in the body and may alter the tendency toward complicating silicosis.

8. Asbestos, which is a silicate, is the only dust other than free silica which has been shown to cause a lung fibrosis with disability.

9. Simple—that is, uncomplicated—silicosis, as seen in industries in the United States, causes relatively little severe disability.

Control of silicosis calls for adequate medical and engineering measures.

A practical program of preëmployment examination of all workers exposed to dust containing silica is essential. Such examinations should include a complete physical examination of each individual, a careful history of past occupational exposure to dust, and a chest roentgenogram with standard technique.

The value of such procedure may be summarized as follows:

1. Protection of prospective employees, who may have diseased lungs, from silica exposure.

2. Discovery of the hazardous jobs, as a result of finding the silicosis cases, in order to eradicate these hazards.

3. Discovery of active and open cases of tuberculosis which are in contact with other employees, especially protecting the younger workers who are susceptible to contact infection.

4. Discovery, through periodic examination of those with inactive tuberculosis, of any reactivation of their tuberculosis before they have been active too long, so as to protect especially the younger employees. This also offers the infected individual a better chance for a cure of his tuberculosis.

5. Discovery of early cases of simple silicosis through periodic examination to give them added protection from further excessive dust exposure.

6. Determination, through periodic physical examination, of the adequacy of the dust control program.

A careful consideration of the foregoing summary as well as the varied experiences of the members of the Medical Committee clearly indicate that there is a wide field for research still in this matter of pulmonary dust diseases.

The following research projects are listed, therefore, for the consideration of Air Hygiene Foundation:

(*a*) Relationship between silicosis and tuberculosis, with especial reference to the question of activation or reactivation of tubercle infection consequent upon exposure to silica, especially in massive doses, over a short period in the absence of definite evidence of silica action (nodulation) in the tissues.

(*b*) The effect of other substances upon the action of silica in the body. It has been claimed that where other substances are present in the dust with silica, they may retard the action of silica so as to actually prevent, or, at least, delay the development of silicosis. Meanwhile, certain other substances have been credited with greatly intensifying the action of silica.

(*c*) Study of the mechanism by which silica exerts its injurious effects upon the body. The pathologist can demonstrate what silica does in the pulmonary and other tissues of the body, but so far no reasonable explanation has been offered or demonstrated as to why silica acts as it does.

(*d*) Research in the technique of roentgenography. In the last few years the technique of taking x-ray films has greatly improved. Inasmuch as it would appear that to an ever-increasing extent preëmployment medical examinations will include chest roentgenograms, a man may be hired or rejected on the basis of his x-ray film. It is, therefore, evident that the very best technique that can be evolved is the least with which industry can be satisfied.

H. B. MILLER, *Managing Director.*

Concerning heavy incidence of bovine tuberculosis in California.*

CALIFORNIA TUBERCULOSIS ASSOCIATION
February 19, 1937.

To the Editor:—California is the black spot . . . of the nation in bovine-tuberculosis control. By July first of this year it will be the only state not a modified accredited area (*i. e.,* less than 0.5 per cent of cattle infected). This state has more diseased cattle than the rest of the United States combined. Other states are threatening quarantines against California dairy products. The public health is still menaced by bovine tuberculosis.

Your participation is needed at a state-wide conference of leaders of economic, public health and public welfare organizations and groups which has been called by the California Tuberculosis Association for the purpose of crystallizing public sentiment for an adequately financed and rapidly moving program for the reduction of bovine tuberculosis to a point that will entitle California to become a modified accredited area.

California is so far behind other states in this movement that it is absolutely essential the State Legislature, which will reassemble next month, shall make adequate financial provision for the program. Unless this is done, the clean-up of the State will be long drawn out. We are confident, however, that if the legislature can be sufficiently impressed with the weight of public interest in this matter, it will respond to public sentiment by making the necessary appropriation.

We regard the situation as acute and important enough to justify you in attending this conference, which will be held in the auditorium of the Pacific Gas and Electric Company, 245 Market Street, San Francisco, on Wednesday morning, March 3, at ten o'clock.

Sincerely yours,

CALIFORNIA TUBERCULOSIS ASSOCIATION.
W. F. HIGBY, *Executive Secretary.*
45 Second Street, San Francisco.

Has Teaching Improved?—An excerpt from *Actions and Reactions:* An Autobiography of Roger W. Babson, 1935, follows:

I think that the success of teaching is nine-tenths in the teacher, and one-tenth in the buildings and textbooks. I would much rather have my grandchildren have teachers with a few diplomas and big hearts than teachers with many diplomas and little hearts. The present fad, that a school principal must have a Ph. D. in order to get a position is all rot. I would much rather know he loves his work and his pupils.

Ph. D.'s do not necessarily make good teachers.

A thousand years from now no building or curriculum will ever take the place of a conscientious and praying school teacher.

I do feel that the health of a teacher is an important factor: in many instances the teacher is cross and impatient because not in good physical condition.

I should give teachers regular physical examinations, and insist that they keep in good condition physically and nervously.

I should forget the Ph. D.'s and turn them over to the M. D.'s.

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* The subject of Tuberculosis, in recent numbers of CALIFORNIA AND WESTERN MEDICINE was mentioned in the following issues: Vol. 44, No. 5, May, 1936, advertising page 7; Vol. 45, No. 1, July, 1936, advertising page 26; Vol. 46, No. 1, January, 1937, advertising page 30; and Vol. 46, No. 2, February, 1937, advertising page 44.